

Appl. No. 09/753,310
Amdt. dated September 23, 2005
Reply to Office Action of June 23, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-41 (Canceled)

Claim 42 (Currently amended): Method of mounting a plurality of spring contact elements to terminals of an electronic component, comprising:

 fabricating a plurality of spring contact elements upon a sacrificial substrate;
 subsequently, while the spring contact elements are resident on the sacrificial substrate, mounting ones of the spring contact elements to terminals of an electronic component; and
 after the ones of the spring contact elements are mounted to the terminals of the electronic component, removing the sacrificial substrate.

Claim 43 (Original): Method, according to claim 42 wherein:

 the electronic component is a space transformer.

Claims 44-47 (Canceled)

Claim 48 (Currently amended): A method of mounting a plurality of spring contact elements to an electronic component, comprising:

 providing a plurality of elongate spring contact elements, each having a base end, a contact end, and a central body portion therebetween; and
 mounting the base ends of ones of the spring contact elements to corresponding terminals on the electronic component, the contact ends of the ones of the spring contact elements extending ~~about~~ above the surface of the electronic component and the body ~~portion~~ portions of the ones of the contact elements being spaced from the electronic component.

Claim 49 (Original): Method, according to claim 48, wherein:

 the electronic component is a space transformer of a probe card assembly.

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Claim 50 (Original): Method, according to claim 48, wherein:
the electronic component is a semiconductor.

Claims 51-53 (Canceled)

Claim 54 (Currently amended): Method of making comprising steps of:
fabricating a contact element on a sacrificial substrate;
mounting said contact element to an electronic component, wherein said electronic component is made separately from said contact element and prior to said mounting of said contact element to said electronic component; and
releasing said contact element from said sacrificial substrate.

Claim 55 (Previously presented): The method of claim 54, wherein said electronic component comprises a terminal, and said step of mounting comprises attaching said contact element to said terminal.

Claim 56 (Previously presented): The method of claim 54, wherein said electronic component comprises a stud, and said step of mounting comprises attaching said contact element to said stud.

Claim 57 (Previously presented): The method of claim 54, wherein said step of fabricating comprises:
forming a masking layer on said sacrificial substrate; and
depositing contact element material in an opening in said masking layer.

Claim 58 (Previously presented): The method of claim 54, wherein said step of fabricating comprises:
forming a trench in said sacrificial substrate, said trench defining a contour of said contact element.

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Claim 59 (Previously presented): The method of claim 58, wherein said step of forming a trench further comprises:

forming a plurality of said trenches configured such that said contour is multilevel.

Claim 60 (Previously presented): The method of claim 59, wherein said multilevel contour comprises a first level and a second level, said first level defining a body portion of said contact element, and said second level defining a contact portion of said contact element.

Claim 61 (Previously presented): The method of claim 59, wherein said step of forming a trench further comprises forming a depression in one of said trenches, said depression defining a tip feature of said contact element.

Claim 62 (Previously presented): The method of claim 54, wherein said contact element comprises a base portion and a contact portion, and wherein said step of mounting comprises attaching said base portion to said electronic component.

Claim 63 (Previously presented): The method of claim 62, wherein said contact element further comprises a body portion disposed between said base portion and said contact portion such that said contact portion is spaced away from said electronic component after said base portion is attached to said electronic component.

Claim 64 (Previously presented): The method of claim 54, wherein said step of mounting is performed prior to said step of releasing.

Claim 65 (Previously presented): The method of claim 54, wherein:

said step of fabricating further comprises fabricating a plurality of said contact elements on said sacrificial substrate;

said step of mounting further comprises mounting said plurality of contact elements on said electronic component; and

said step of releasing further comprises releasing said plurality of contact elements from said sacrificial substrate.

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Claim 66 (Previously presented): The method of claim 65, wherein said step of fabricating a plurality of said contact elements comprises forming a plurality of trenches in said sacrificial substrate, said plurality of trenches defining contours of said contact elements.

Claim 67 (Previously presented): The method of claim 66, wherein said plurality of trenches are configured such that said contours are multilevel.

Claim 68 (Previously presented): The method of claim 67, wherein each said multilevel contour comprises a first level and a second level, said first level defining a body portion of one of said contact elements, and said second level defining a contact portion of said one of said contact elements.

Claim 69 (New): The method of claim 42, wherein the electronic component is made separately from the spring contact elements and prior to the mounting of the ones of the spring contact elements to the electronic component.

Claim 70 (New): The method of claim 42, wherein each of the spring contact elements comprises a base portion configured for mounting to the terminals of the electronic component, a tip portion configured to contact another component, and a body portion between the base and the tip portion, said method further comprising forming trenches in the sacrificial substrate, each of the trenches defining a contour of the body portion of one of the spring contact elements.

Claim 71 (New): The method of claim 42, wherein the ones of the spring contact elements are configured to form pressure based electrical connections with another electronic component while the ones of the spring contact elements are pressed against the other electronic component.

Claim 72 (New): The method of claim 48, wherein the electronic component is made separately from the spring contact elements and prior to the mounting of the base ends of the ones of the spring contact elements to the electronic component.

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Claim 73 (New): The method of claim 48, wherein the ones of the spring contact elements are configured to form pressure based electrical connections with another electronic component while the contact ends of the ones of the spring contact elements are pressed against the other electronic component.

Claim 74 (New): The method of claim 58, wherein:

said contact element comprises a base portion configured for mounting to said electronic component, a tip portion configured to contact another component, and a body portion between said base and said tip portion, and

said trench defines a contour of said body portion.

Claim 75 (New): The method of claim 65, wherein:

each of said contact elements comprises a base portion configured for mounting to said electronic component, a tip portion configured to contact another component, and a body portion between said base and said tip portion, and

each of said trenches defines a contour of a body portion of one of said contact elements.

Claim 76 New): The method of claim 54, wherein the contact element is configured to form a pressure based electrical connection with another electronic component while the contact element is pressed against the other electronic component.